Legend: (Proposed Amendment(s))
Single Underline = Proposed new language
[Bold, Print, and Brackets] = Current language proposed for deletion
Regular Print = Current language
(No change.) = No changes are being considered for the designated subdivision

§289.202. Standards for Protection Against Radiation from Radioactive Materials.

(a) - (o) (No change.)

(p) General surveys and monitoring.

(1) Each licensee shall make, or cause to be made, surveys that:

(A) are necessary for the licensee to comply with this chapter **[section]**; and

(B) (No change.)

(2) - (4) (No change.)

(q) - (dd) (No change.)

(ee) Procedures for receiving and opening packages.

(1) Each licensee who expects to receive a package containing quantities of radioactive material in excess of a Type A quantity, as defined in §289.201(b) of this title and specified in §289.257(ff)(6) **[§289.257(s)(1)]** of this title (relating to Packaging and Transportation of Radioactive Material), shall make arrangements to receive:

(A) - (B) (No change.)

(2) Each Licensee shall:

(A) (No change.)

(B) monitor the external surfaces of a labeled package, labeled with a Radioactive White I, Yellow II, or Yellow III label as specified in DOT regulations 49 CFR §§172.403 and §§172.436-440, for radiation levels unless the package contains quantities of radioactive material that are less than or equal to the Type A quantity, as defined in §289.201(b) of this title and specified in §289.257(ff)(6) **[§289.257(s)(1)]** of this title; and

(C) (No change.)

(3) (No change.)

(4) The licensee shall immediately notify the final delivery carrier and, by telephone and telegram, mailgram, or facsimile, the agency when removable radioactive surface

contamination or external radiation levels exceed the limits established in subparagraphs (A) and (B) of this paragraph.

(A) Limits for removable radioactive surface contamination levels.

(i) (No change.)

(ii) Removable external radioactive contamination wipe limits are as follows.

Figure: 25 TAC §289.202(ee)(4)(A)(ii) **[Figure: 25 TAC §289.202(ee)(4)(A)(ii)]**

(iii) (No change.)

(B) (No change.)

(5) - (6) (No change.)

(ff) General requirements for waste management.

(1) Unless otherwise exempted, a licensee shall discharge, treat, or decay licensed material or transfer waste for disposal only:

(A) (No change.)

(B) by decay in storage with prior approval from the agency, except as authorized in §289.256(ee) **[§289.256(x)]** of this title (relating to Medical and Veterinary Use of Radioactive Material);

(C) - (D) (No change.)

(2) - (6) (No change.)

(gg) - (mm) (No change.)

(nn) Records of surveys.

(1) Each licensee shall maintain records showing the results of surveys and calibrations required by subsections (p) and (ee)(2) of this section and include a unique identification of survey instrument(s). The licensee shall retain these records for three years after the record is made.

(2) (No change.)

(oo) - (ww) (No change.)

(xx) Notification of incidents.

(1) Notwithstanding other requirements for notification, each licensee shall immediately report each event involving a source of radiation possessed by the licensee that may have caused or threatens to cause:

(A) an individual, except a patient administered radiation for purposes of medical diagnosis or therapy, to receive:

(i) - (iii) (No change.)

(B) (No change.)

(2) - (8) (No change.)

(yy) - (aaa) (No change.)

(bbb) Reports of leaking or contaminated sealed sources. The licensee shall immediately notify the agency if the test for leakage or contamination required in accordance with §289.201(g) of this title indicates a sealed source is leaking or contaminated. A written report of a leaking or contaminated source shall be submitted to the agency within five days. The report shall include the equipment involved, the test results, the date of the test, model and serial number, if assigned, of the leaking source, the radionuclide and its estimated activity, and the corrective action taken.

(ccc) - (fff) (No change.)

(ggg) Appendices.

(1) - (5) (No change.)

(6) Acceptable surface contamination limits.

Figure: 25 TAC §289.202(ggg)(6) **[Figure: 25 TAC §289.202(ggg)(6)]**

(7) (No change.)

(8) Cumulative occupational exposure form. The following, RC Form 202-2 **[BRC Form 202-2]**, is to be used to document cumulative occupational exposure history: (Please find RC Form 202-2 **[BRC Form 202-2]** at the end of this section.)

Figure: 25 TAC §289.202(ggg)(8) **[Figure: 25 TAC §289.202(ggg)(8)]**

(9) Occupational exposure form. The following, RC Form 202-3 **[BRC Form 202-3]**, is to be used to document occupational exposure record for a monitoring period: (Please find RC Form 202-3 **[BRC Form 202-3]** at the end of this section.)

Figure: 25 TAC §289.202(ggg)(9) **[Figure: 25 TAC §289.202(ggg)(9)]**

(hhh) (No change.)

Figure: 25 TAC §289.202(ee)(4)(A)(ii)

Contaminant	Maximum Permissible Limits pCi/cm^2 *	dpm/cm^2
Beta-gamma emitting radionuclides; all radionuclides with half-lives less than 10 days; natural uranium; natural thorium, uranium-235; uranium-238; thorium-232; thorium-228; and thorium-230 when contained in ores or physical concentrates….	100	220
All other alpha emitting radionuclides….	10	22

* To convert picocuries (pCi) to SI units of millibecquerels, multiply the values by 37.

Figure: 25 TAC §289.202(ggg)(6)

NUCLIDE[a]	AVERAGE[bcf]	MAXIMUM[bdf]	REMOVABLE[bcef]
U-nat, U-235, U-238, and associated decay products except Ra-226, Th-230, Ac-227, and Pa-231	5,000 dpm alpha/ 100 cm^2	15,000 dpm alpha/ 100 cm^2	1,000 dpm alpha/ 100 cm^2
Transuranics, Ra-223, Ra-224, Ra-226, Ra-228, Th-nat, Th-228, Th-230, Th-232, U-232, Pa-231, Ac-227, Sr-90, I-129	1,000 dpm/100 cm^2	3,000 dpm/100 cm^2	200 dpm/100 cm^2
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5,000 dpm beta, gamma/100 cm^2	15,000 dpm beta, gamma/100 cm^2	1,000 dpm beta, gamma/100 cm^2
Tritium (applicable to surface and subsurface)[g]	NA	NA	10,000 dpm/100 cm^2

[a] Where surface contamination by both alpha and beta-gamma emitting nuclides exists, the limits established for alpha and beta-gamma emitting nuclides should apply independently.

[b] As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

[c] Measurements of average contamination level should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each object.

[d] The maximum contamination level applies to an area of not more than 100 cm^2.

[e] The amount of removable radioactive material per 100 cm^2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an

appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

[f] The average and maximum radiation levels associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/hr at 1 centimeter and 1.0 mrad/hr at 1 centimeter, respectively, measured through not more than 7 mg/cm^2 of total absorber.

[g] Property recently exposed or decontaminated, should have measurements (smears) at regular time intervals to ensure that there is not a build-up of contamination over time. Because tritium typically penetrates material it contacts, the surface guidelines in group 4 are not applicable to tritium. The agency has reviewed the analysis conducted by the Department of Energy Tritium Surface Contamination Limits Committee ("Recommended Tritium Surface Contamination Release Guides," February 1991), and has assessed potential doses associated with the release of property containing residual tritium. The agency recommends the use of the stated guideline as an interim value for removable tritium. Measurements demonstrating compliance of the removable fraction of tritium on surfaces with this guideline are acceptable to ensure that non-removable fractions and residual tritium in mass will not cause exposures that exceed dose limits as specified in this section and agency constraints.

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RC Form 202-2 — Texas Department of State Health Services/Radiation Control

CUMULATIVE OCCUPATIONAL EXPOSURE HISTORY

1. NAME (LAST, FIRST, MIDDLE INITIAL)	2. IDENTIFICATION NUMBER	3. ID TYPE	4. SEX MALE ☐ FEMALE ☐	5. DATE OF BIRTH

6. MONITORING PERIOD		7. LICENSEE OR REGISTRANT NAME		8. LICENSE OR REGISTRATION NUMBER		9. RECORD ☐ ESTIMATE ☐ NO RECORD ☐	10. ROUTINE ☐ PSE ☐
11. DDE	12. LDE	13. SDE, WB	14. SDE, ME	15. CEDE	16. CDE	17. TEDE	18. TODE
6. MONITORING PERIOD		7. LICENSEE OR REGISTRANT NAME		8. LICENSE OR REGISTRATION NUMBER		9. RECORD ☐ ESTIMATE ☐ NO RECORD ☐	10. ROUTINE ☐ PSE ☐
11. DDE	12. LDE	13. SDE, WB	14. SDE, ME	15. CEDE	16. CDE	17. TEDE	18. TODE
6. MONITORING PERIOD		7. LICENSEE OR REGISTRANT NAME		8. LICENSE OR REGISTRATION NUMBER		9. RECORD ☐ ESTIMATE ☐ NO RECORD ☐	10. ROUTINE ☐ PSE ☐
11. DDE	12. LDE	13. SDE, WB	14. SDE, ME	15. CEDE	16. CDE	17. TEDE	18. TODE
6. MONITORING PERIOD		7. LICENSEE OR REGISTRANT NAME		8. LICENSE OR REGISTRATION NUMBER		9. RECORD ☐ ESTIMATE ☐ NO RECORD ☐	10. ROUTINE ☐ PSE ☐
11. DDE	12. LDE	13. SDE, WB	14. SDE, ME	15. CEDE	16. CDE	17. TEDE	18. TODE
6. MONITORING PERIOD		7. LICENSEE OR REGISTRANT NAME		8. LICENSE OR REGISTRATION NUMBER		9. RECORD ☐ ESTIMATE ☐ NO RECORD ☐	10. ROUTINE ☐ PSE ☐
11. DDE	12. LDE	13. SDE, WB	14. SDE, ME	15. CEDE	16. CDE	17. TEDE	18. TODE
6. MONITORING PERIOD		7. LICENSEE OR REGISTRANT NAME		8. LICENSE OR REGISTRATION NUMBER		9. RECORD ☐ ESTIMATE ☐ NO RECORD ☐	10. ROUTINE ☐ PSE ☐
11. DDE	12. LDE	13. SDE, WB	14. SDE, ME	15. CEDE	16. CDE	17. TEDE	18. TODE

19. SIGNATURE OF MONITORED INDIVIDUAL	20. DATE SIGNED	21. CERTIFYING ORGANIZATION	22. SIGNATURE OF DESIGNEE	23. DATE SIGNED

INSTRUCTIONS AND ADDITIONAL INFORMATION PERTINENT TO THE COMPLETION OF RC FORM 202-2
(All doses should be stated in rems)

1. Type or print the full name of the monitored individual in the order of last name (include "Jr," "Sr," "III," etc.), first name, middle initial (if applicable).

2. Enter the individual's identification number, including punctuation. This number should be the 9-digit social security number if at all possible. If the individual has no social security number, enter the number from another official identification such as a passport or work permit.

3. Enter the code for the type of identification used as shown below:

CODE	ID TYPE
SSN	U.S. Social Security Number
PPN	Passport Number
CSI	Canadian Social Insurance Number
WPN	Work Permit Number
IND	INDEX Identification Number
OTH	Other

4. Check the box that denotes the sex of the individual being monitored.

5. Enter the date of birth of the individual being monitored in the format MM/DD/YY.

6. Enter the monitoring period for which this report is filed. The format should be MM/DD/YY - MM/DD/YY.

7. Enter the name of the licensee, registrant, or facility not licensed by the Agency that provided monitoring.

8. Enter the Agency license or registration number or numbers.

9. Place an "X" in Record, Estimate, or No Record. Choose "Record" if the dose data listed represent a final determination of the dose received to the best of the licensee's or registrant's knowledge. Choose "Estimate" only if the listed dose data are preliminary and will be superseded by a final determination resulting in a subsequent report. An example of such an instance would be dose data based on self-reading dosimeter results and the licensee or registrant intends to assign the record dose on the basis of TLD results that are not yet available.

10. Place an "X" in either Routine or PSE. Choose "Routine" if the data represent the results of monitoring for routine exposures. Choose "PSE" if the listed dose data represents the results of monitoring of planned special exposures received during the monitoring period. If more than one PSE was received in a single year, the licensee should sum them and report the total of all PSEs.

11. Enter the deep dose equivalent (DDE) to the whole body.

12. Enter the eye dose equivalent (LDE) recorded for the lens of the eye.

13. Enter the shallow dose equivalent recorded for the skin of the whole body (SDE,WB).

14. Enter the shallow dose equivalent recorded for the skin of the extremity receiving the maximum dose (SDE,ME).

15. Enter the committed effective dose equivalent (CEDE).

16. Enter the committed dose equivalent (CDE) recorded for the maximally exposed organ.

17. Enter the total effective dose equivalent (TEDE). The TEDE is the sum of items 11 and 15.

18. Enter the total organ dose equivalent (TODE) for the maximally exposed organ. The TODE is the sum of items 11 and 16.

19. Signature of the monitored individual. The signature of the monitored individual on this form indicates that the information contained on the form is complete and correct to the best of his or her knowledge.

20. Enter the date this form was signed by the monitored individual.

21. [OPTIONAL] Enter the name of the licensee, registrant or facility not licensed by the Agency, providing monitoring for exposure to radiation (such as a DOE facility) or the employer if the individual is not employed by the licensee or registrant and the employer chooses to maintain exposure records for its employees.

22. [OPTIONAL] Signature of the person designated to represent the licensee, registrant or employer entered in item 21. The licensee, registrant or employer who chooses to countersign the form should have on file documentation of all the information on the Agency Form Y being signed.

23. [OPTIONAL] Enter the date this form was signed by the designated representative.

RC Form 202-3 Texas Department of State Health Services/Radiation Control

OCCUPATIONAL EXPOSURE RECORD FOR A MONITORING PERIOD

1. NAME (LAST, FIRST, MIDDLE INITIAL)	2. IDENTIFICATION NUMBER	3. ID TYPE	4. SEX ☐ MALE ☐ FEMALE	5. DATE OF BIRTH

6. MONITORING PERIOD	7. LICENSEE OR REGISTRANT NAME	8. LICENSE OR REGISTRATION NUMBER(S)	9A. ☐ RECORD ☐ ESTIMATE	9B. ☐ ROUTINE ☐ PSE

INTAKES

10A. RADIONUCLIDE	10B. CLASS	10C. MODE	10D. INTAKE IN μCi

DOSES (in rem)

DEEP DOSE EQUIVALENT (DDE)	11.
EYE DOSE EQUIVALENT TO THE LENS OF THE EYE (LDE)	12.
SHALLOW DOSE EQUIVALENT, WHOLE BODY (SDE,WB)	13.
SHALLOW DOSE EQUIVALENT, MAX EXTREMITY (SDE,ME)	14.
COMMITTED EFFECTIVE DOSE EQUIVALENT (CEDE)	15.
COMMITTED DOSE EQUIVALENT, MAXIMALLY EXPOSED ORGAN (CDE)	16.
TOTAL EFFECTIVE DOSE EQUIVALENT ***(BLOCKS 11+15) (TEDE)***	17.
TOTAL ORGAN DOSE EQUIVALENT, MAX ORGAN ***(BLOCKS 11+16) (TODE)***	18.
19. COMMENTS	

20. SIGNATURE -- LICENSEE OR REGISTRANT	21. DATE PREPARED

INSTRUCTIONS AND ADDITIONAL INFORMATION PERTINENT TO THE COMPLETION OF RC FORM 202-3
(All doses should be stated in rems)

1. Type or print the full name of the monitored individual in the order of last name (include "Jr," "Sr," "III," etc.), first name, middle initial (if applicable).

2. Enter the individual's identification number, including punctuation. This number should be the 9-digit social security number if at all possible. If the individual has no social security number, enter the number from another official identification such as a passport or work permit.

3. Enter the code for the type of identification used as shown below:

CODE	ID TYPE
SSN	U.S. Social Security Number
PPN	Passport Number
CSI	Canadian Social Insurance Number
WPN	Work Permit Number
IND	INDEX Identification Number
OTH	Other

4. Check the box that denotes the sex of the individual being monitored.

5. Enter the date of birth of the individual being monitored in the format MM/DD/YY.

6. Enter the monitoring period for which this report is filed. The format should be MM/DD/YY - MM/DD/YY.

7. Enter the name of the licensee or registrant.

8. Enter the Agency license or registration number or numbers.

9A. Place an "X" in Record or Estimate. Choose "Record" if the dose data listed represent a final determination of the dose received to the best of the licensee's or registrant's knowledge. Choose "Estimate" only if the listed dose data are preliminary and will be superseded by a final determination resulting in a subsequent report. An example of such an instance would be dose data based on self-reading dosimeter results and the licensee intends to assign the record dose on the basis of TLD results that are not yet available.

9B. Place an "X" in either Routine or PSE. Choose "Routine" if the data represent the results of monitoring for routine exposures. Choose "PSE" if the listed dose data represents the results of monitoring of planned special exposures received during the monitoring period. If more than one PSE was received in a single year, the licensee or registrant should sum them and report the total of all PSEs.

10A. Enter the symbol for each radionuclide that resulted in an internal exposure recorded for the individual, using the format "Xx-###x," for instance, Cs-137 or Tc-99m.

10B. Enter the lung clearance class as listed in subsection (ggg)(2)(F) of this section for all intakes by inhalation.

10C. Enter the mode of intake. For inhalation, enter "H." For absorption through the skin, enter "B." For oral ingestion, enter "G." For injection, enter "J."

10D. Enter the intake of each radionuclide in μCi.

11. Enter the deep dose equivalent (DDE) to the whole body.

12. Enter the eye dose equivalent (LDE) recorded for the lens of the eye.

13. Enter the shallow dose equivalent recorded for the skin of the whole body (SDE,WB).

14. Enter the shallow dose equivalent recorded for the skin of the extremity receiving the maximum dose (SDE,ME).

15. Enter the committed effective dose equivalent (CEDE) or "NR" for "Not Required" or "NC" for "Not Calculated".

16. Enter the committed dose equivalent (CDE) recorded for the maximally exposed organ or "NR" for "Not Required" or "NC" for "Not Calculated".

17. Enter the total effective dose equivalent (TEDE). The TEDE is the sum of items 11 and 15.

18. Enter the total organ dose equivalent (TODE) for the maximally exposed organ. The TODE is the sum of items 11 and 16.

19. COMMENTS.
In the space provided, enter additional information that might be needed to determine compliance with limits. An example might be to enter the note that the SDE,ME was the result of exposure from a discrete hot particle. Another possibility would be to indicate that an overexposed report has been sent to the Agency in reference to the exposure report.

20. Signature of the person designated to represent the licensee or registrant.

21. Enter the date this form was prepared.